

## **REMARKS**

In the Office Action dated May 29, 2003, claims 1-24 are pending and under consideration. Claims 16-22 have been objected to under 37 C.F.R. §1.75(c) as allegedly improper. Claims 1-15 and 23-24 have been rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enabling support. Claims 1-15 and 23-24 are rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. Furthermore, the Examiner has objected to the abstract and the title of the application. The declaration is also objected to as allegedly defective. In addition, the Examiner alleges that the application fails to comply with the requirements of 37 C.F.R. §§1.821-1.825.

This Response addresses each of the Examiner's rejections and objections. Applicants therefore respectfully submit that the present application is in condition for allowance. Favorable consideration of all pending claims is therefore respectfully requested.

The Abstract has been objected to as in excess of 150 words. Applicants have amended the abstract to have fewer than 150 words. A clean copy of the amended abstract is also enclosed. Withdrawal of the objection is therefore respectfully requested.

The title of the invention is objected to as allegedly not descriptive of the invention. Applicants have amended the title to recite "A Method for Detecting Variant HBV". Applicants respectfully submit that the new title is descriptive of the claimed invention. Withdrawal of the objection is therefore respectfully requested.

The Examiner alleges that the declaration is defective. Specifically, the Examiner alleges that non-initialed changes have been made to the residence address of inventor Harriet Isom. Applicants are providing herewith a substitute declaration by Harriet Isom, which is in

compliance with 37 C.F.R. §1.67(a) and identifies the present application by serial number and filing date.

Claims 16-22 have been objected to under 37 C.F.R. §1.75(c) as allegedly improper. Therefore, the Examiner has not considered Claims 16-22 on the merits. Applicants have amended the claims such that the dependencies of the amended claims are correct. Withdrawal of the objection is therefore respectfully requested.

Claims 1-15 and 23-24 are rejected under 35 U.S.C. §112, first paragraph, as allegedly lacking enabling support. Specifically, the Examiner alleges that the specification, while being enabling for the claimed methods of detecting HBV variants or HBV DNA polymerase activity using HepG2 cells, does not reasonably provide enablement for the same methods using any cells or cell lines. The Examiner alleges, based on Boyce et al. (*PNAS*, 1996, Vol. 93, pp. 2348-52), that the art with regard to infection of non-liver cell lines with recombinant baculoviral-HBV vectors is poorly developed. The Examiner thus concludes that it would require undue experimentation to practice the entire scope of the claimed invention.

Applicants respectfully submit that the specification provides adequate guidance for those skilled in the art to practice the claimed methods by employing any suitable cell lines capable of infection by baculovirus. See, e.g., page 36, lines 1-4 of the specification, and particularly HepG2 and Huh-5 cell lines, as well as other hepatocyte cell lines and primary hepatocyte cell cultures. However, in an effort to favorably advance the prosecution of the present application, Applicants have amended independent claims 1 and 24 to further define the cells as “of hepatic origin”. Applicants respectfully submit that, in light of the present teaching, those skilled in the art would be able to use any cells of hepatic origin and transfect the same, for example, with Baculoviral-BHV vectors, without undue experimentation. As such, it is

respectfully submitted that the rejection of claims 1-15 and 23-24 under 35 U.S.C. §112, first paragraph, is overcome. Withdrawal of the rejection is respectfully submitted.

Claims 1-15 and 23-24 are rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite.

The Examiner alleges that Claims 1-15 and 23 (and dependent claims) are vague. Specifically, the Examiner alleges that Claim 1 lacks antecedent basis for the term “the variant virus.” The Examiner further alleges that the term “the variant virus” is unclear because there are two different variant viruses (HBVs) recited in the claims and it is unclear to which variant virus is being referred.

Applicants respectfully submit that the claims 1 and 23 have been amended to recite “the variant HBV to be detected”. Applicants submit that the claims as amended are not vague.

The Examiner also alleges that claim 4 is vague as to whether an agent can be both a non-nucleoside analogue reverse transcriptase inhibitor and a non-nucleoside analogue DNA-dependent DNA polymerase inhibitor.

Applicants respectfully submit that claim 4 has been amended to clarify that an agent can be either one of or both a non-nucleoside analogue reverse transcriptase inhibitor and a non-nucleoside analogue DNA-dependent DNA polymerase inhibitor.

The Examiner alleges that claim 24 is vague in that the preamble of the claim is broader than what is supported. Applicants have amended the preamble of the claim by reciting “a method for detecting HBV DNA polymerase activity” (emphasis added). Claim 24 as amended is not vague.

The Examiner further alleges that claims 23 and 24 are vague in the recitation of the phrase “...non-nucleoside analogues DNA dependent DNA polymerase inhibitors” (emphasis

added). Applicants have amended the claims to recite "...non-nucleoside analogue DNA dependent DNA polymerase inhibitors" (emphasis added), in accordance with the Examiner's suggestion.

The Examiner also alleges that claim 24 is vague in the recitation of the phrase "...sufficient for the HBV and to replicate..." Applicants have amended claim 24 to recite "...sufficient for the HBV to replicate..."

The Examiner further alleges that claim 24 is also vague in the recitation of the phrase "...therefrom to HBV polymerase assay..." Applicants have amended the claim to add the word "an" prior to "HBV", as the Examiner has suggested.

In view of the foregoing amendments, Applicants respectfully submit that the rejection under 35 U.S.C. §112, second paragraph, is overcome. Withdrawal of the rejection is therefore respectfully requested.

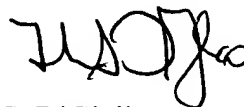
Finally, the Examiner contends that the present application fails to comply with the requirements of 37 C.F.R. §§1.821 through 1.825. Specifically, the Examiner points out that the sequence of SEQ ID NO: 7 in the Sequence Listing is inconsistent with the disclosure in the specification at pages 33-34. In addition, the amino acid sequence present in Figure 3 is not identified by a sequence identifier.

Applicants are providing herewith a substitute Sequence Listing, in which the correct nucleotide sequence of SEQ ID NO: 7, as disclosed at pages 33-34, is presented. In addition, Applicants have added SEQ ID NO: 23, setting forth the amino acid in Figure 3, in the substitute Sequence Listing. Applicants have also amended the description of Figure 3 to insert SEQ ID NO: 23. A paper copy and a computer-readable copy of the substitute Sequence Listing are provided herewith, together with a statement verifying the identity of the paper and the computer

copy of the Sequence Listing. A copy of the Notice to comply is also enclosed as required. No new matter is introduced by the substitute Sequence Listing.

In view of the foregoing Amendment and the Remarks, it is believed that the subject case is in condition for an examination on the merits, which action is earnestly solicited.

Respectfully submitted,



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Enc.:

- New abstract;
- Substitute paper and computer-readable copy of the Sequence Listing;
- Statement under §1.821(f);
- Substitute declaration of Harriet Isom.